

# **Guidelines TO FIRE SAFETY IN EUROPEAN HOTELS**

## **Hotel Fire Safety MBS (Management, Building and Systems) Methodology**

**A voluntary tool for the fire safety management of hotels in Europe, made available by HOTREC for information to its national associations and all interested parties. It will be up to the national associations to decide whether to make it available to their members and other interested parties in their countries.**

**In case of fire, the safety of guests, employees,  
and emergency responders  
is paramount**

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| <b>CONTENTS</b>  | <b>Pages</b> |
|--|--------------|
| PREAMBLE   | 4            |
| SCOPE  | 4            |
| INTRODUCTION   | 5            |
| <b>SECTION 'M' MANAGEMENT OF HOTEL FIRE SAFETY</b>   | <b>8</b>     |
| M1 RESPONSIBILITY FOR FIRE SAFETY  | 8            |
| M2 FIRE SAFETY REGISTER  | 9            |
| M3 EMERGENCY RESPONSE PLAN   | 10           |
| M4 STAFF FIRE SAFETY TRAINING  | 10           |
| M5 FIRE EVACUATION DRILL   | 12           |
| M6 REGULAR MANAGEMENT CHECKS/ ROUTINE<br>MAINTENANCE AND INSPECTION OF FIRE SYSTEMS<br>AND EQUIPMENT | 13           |
| M7 FIRE RISK ASSESSMENTS   | 14           |
| M8 CONTINGENCY PLAN  | 15           |
| M9 MANAGEMENT OF NEW CONSTRUCTION<br>RENOVATION /EXTENSION WORK                                      | 15           |
| M10 MANAGEMENT OF THE THREAT OF ARSON  | 17           |
| <b>INTRODUCTION TO SECTION "B" BUILDING<br/>AND SECTION "S" SYSTEMS</b>                              | <b>18</b>    |
| <b>SECTION 'B' BUILDING</b>  | <b>19</b>    |
| B1 SITE SELECTION & BUILDING LAY-OUT   | 19           |
| B2 CONSTRUCTION AND INTERIOR FINISHES  | 20           |

|   |    |
|---|----|
| B3 ESCAPE ROUTES  | 21 |
| B4 SPECIAL PROVISIONS FOR HIGH RISE BUILDINGS                               | 24 |
| B5 SPECIAL PROVISIONS FOR REMOTE OR ISOLATED<br>HOTELS AND MOUNTAIN HOTELS  | 25 |
| B6 SPECIAL PROVISIONS FOR PROTECTED BUILDINGS                               | 25 |
| B7 SPECIAL PROVISIONS FOR PREFABRICATED BUILDINGS                           | 25 |
| B8 COVERED OR BASEMENT CAR PARKS  | 25 |
| <b>SECTION 'S' SYSTEMS (BUILDING SERVICES)</b>                              | 26 |
| S1 SYSTEMS  | 26 |
| S2 DETECTION AND ALARM SYSTEMS  | 28 |
| S3 SMOKE MANAGEMENT SYSTEMS   | 29 |
| S4 MANUAL FIREFIGHTING EQUIPMENT  | 30 |
| S5 SPRINKLER SYSTEMS  | 31 |
| S6 SPECIAL RISKS  | 31 |
| GLOSSARY OF TERMS   | 33 |
| ANNEX 1 MEMBERS OF WORKING GROUP AND<br>STAKEHOLDERS CONSULTATIVE COMMITTEE | 36 |

## **1. PREAMBLE**

- 1.1 The safety of guests as well as of personnel is of paramount importance for the European hospitality industry. Citizens of the European Community should be afforded the same degree of safety wherever they may be within the member countries. This principle applies to those people working and staying in hotels within the Union, and in particular with regard to safety from fire.
- 1.2 In line with Council Recommendation 86/666/EEC, the main objectives to be achieved in terms of hotel fire safety are:
- To reduce the risk of fire breaking out;
  - To prevent the spread of flames and smoke;
  - To ensure that all occupants are evacuated safely; and
  - To enable the emergency services to take action.
- 1.3 The rules and standards at national/regional and local level in most Member States follow carefully the indications given in the 1986 Council Recommendation and respond to its objectives.
- 1.4 These guidelines describe, in a non exhaustive manner, “good practises” which contribute to fire safety in hotels in Europe. This document is intended to be used, on a voluntary basis, in support of national/regional and local regulations and standards.
- 1.5 HOTREC does not intend to impose this document: national/regional/local regulations and standards continue to be the only legal instruments imposing obligations upon the hoteliers and which must always be complied with. They will always take precedence over contradictory provisions in these guidelines. By issuing these guidelines, HOTREC does not intend to impose any obligation on or request commitments from associations and hoteliers; they should therefore never be invoked against a national association or an hotelier.
- 1.6 This document summarizes hotel fire safety into a set of simple and basic concepts, which any hotelier can easily understand and apply. It should serve as a useful tool for all parties voluntarily in search of guidance on fire safety.
- 1.7 This document is made available by HOTREC to its national associations and all interested parties. It will be up to the national associations to decide whether to make it available to their members and other interested parties in their countries.

## **2. SCOPE**

- 2.1 The word ‘hotel’ and what it represents is understood by most people. However there are a number of terms used throughout Europe for premises providing ‘hotel’ type services. These can be found and defined in ISO 18513 (2003). However, for the purposes of this document a ‘hotel’ is considered to be a building or part of a building of any size, that provides accommodation and possibly other services, such as meals, for paying guests.

- 2.2 Although the guidance is meant for all hotels regardless of their type or location, not all of its provisions will be applicable to every hotel. In particular, the application of the guidance to smaller hotels should be carried out in a measured and realistic manner, taking into account the problems and constraints experienced by many smaller hotels. It is considered however that all parts of Section M Management should be addressed in full in all hotels.
- 2.3 Particular attention should be paid to protected historic buildings, where the form of construction or layout (e.g. often with a single stairway) presents challenges when used as commercial hotel accommodation.
- 2.4 For new hotels or extensions or major refurbishments it may be used by the Design Team in support of local regulations.
- 2.5 For existing hotels it can be used by the Management Team to help their understanding of the fire safety provisions in their hotel and to ensure a proper level of fire safety management is applied to individual establishments.

### **3. INTRODUCTION**

- 3.1 It is important to recognise that member states have historically adopted and applied different technical standards in their approach to fire safety. Despite some attempts over the past 25 years national governments have rejected the concept of a set of prescriptive requirements covering the design and management of hotels across the Union.
- 3.2 This dilemma is further compounded by the diverse nature of the hotel industry in Europe which ranges from small family run establishments to major chain hotels which can be located in towns, cities, countryside, beaches or on the side of a mountain.
- 3.3 An initiative by the member organisations of HOTREC\* has resulted in the preparation of this document which provides fire safety guidance to designers, owners and managers of hotels. Given the problems already identified with trying to implement a prescriptive set of standards, this guidance describes the objectives to be achieved and allows a performance based approach to meet those objectives.
- 3.4 A Working Party was established by HOTREC to develop the guidance document. The Working Party consisted of experts of the national associations and some hotel chains plus the Chair of the Federation of the European Union Fire Officers Association, who were required to obtain guidance from, and to report on progress to, a Stakeholders Consultative Committee. The members of the Working Party and of the Stakeholders Consultative Committee are listed at ANNEX 1
- 3.5 The document encourages the use of fire engineering techniques to overcome problems which are seen as difficult or impossible to solve using prescriptive or traditional approaches. One objective of this document is that it should influence existing and future national fire codes by allowing a performance based approach to achieve the safety objectives. It further highlights the need to establish the competence of those looking to apply fire engineering techniques.
- 3.6 For designers, this Guide describes the fire safety design objectives to be achieved, in support of the relevant national or local standards, when designing a new hotel or a major refurbishment/extension to an existing hotel.

- 3.7 For managers and staff in existing hotels it provides a management tool enabling them to identify and understand the nature of the fire safety design and the fire safety systems which have been incorporated into their hotel.
- 3.8 It also enables them to ensure that the design and systems are not compromised through ignorance or bad practise and provides advice on the need for regular inspections of the hotel, maintenance of the fire safety systems, the keeping of records and proper training of all staff in fire safety matters.
- 3.9 The Guide adopts a performance based approach to fire safety in hotels using a holistic approach to achieve the suggested performance levels. It does this by considering the individual hotel as three separate elements which combine to form an overall acceptable level of fire safety.
- 3.10 These elements fall under the headings of Management, Building and Systems (MBS).
- 3.11 The existing stock of hotel buildings have vastly differing construction standards and the type and level of fire safety systems provided will also vary according to the type, nature, age and location of the hotel within Europe.
- 3.12 Whilst the ideal situation would be to bring all hotels up to an agreed level of 'construction and system' fire safety, it has already been acknowledged that this is not possible, at least not within the short to medium term.
- 3.13 Therefore it is suggested that the simplest, most effective and economically viable way of considerably improving hotel fire safety in the short term is to focus on raising the level of fire safety management in hotels throughout Europe.
- 3.14 The following Sections describe how the three elements, individually and in combination, can be utilised by the management team and designers to considerably improve levels of fire safety in hotels across Europe.
- 3.15 For the Owner/Manager and Management Team the most important part of this guidance document is Section 'M' – Management of Hotel Fire Safety. It is suggested that they try to achieve complete implementation of Section 'M' within their individual hotel.
- 3.16 Many hotel associations and other interested groups have developed their own guidance documents on fire safety for hotels. These generally give advice to owners, managers and staff on good fire safety management and actions to be taken in the event of a fire. Some also cover fire safety systems, building structure and training.
- 3.17 These documents may continue to be used for reference purposes but it is advisable that they be checked against this document to ensure all aspects have been covered.
- 3.18 Implementation of the guidance in smaller hotels will need to be tailored to the type and nature of the individual hotel. Particular attention should be paid to protected historic buildings used as hotels, where the form of construction or layout (e.g. often with a single stairway) presents challenges when used as commercial hotel accommodation. Where implementation of the guidance in full to both historic buildings and smaller hotels would appear to be onerous, use of the fire risk assessment approach can be used to achieve an acceptable level of safety.

3.19 Sections 'B' and 'S' describe a basic level of fire safety design which ideally should be achieved in all hotels. In some parts of Europe this level has already been met but for others these will be levels to strive to achieve over a period of time.

## Section “M”- MANAGEMENT OF HOTEL FIRE SAFETY

However well a hotel building is designed and constructed, or however good the fire safety systems installed, unless there is effective fire safety management within the hotel there is a very serious risk that the building and systems could be compromised in a fire emergency. Good fire safety management is a fundamental part of the whole fire safety strategy for hotels. It relies on the following good practises:

- Designate a person to be responsible for fire safety in the hotel;
- Maintain a Fire Safety Register containing information relating to fire safety systems, management procedures and training;
- Prepare an emergency response plan;
- Ensure that every member of staff receives information, instructions and training in fire safety in accordance with their duties;
- Organise a planned and documented fire evacuation drill in the hotel at least once a year;
- Ensure that all fire safety systems are regularly inspected and maintained by suitably qualified persons; and
- Have a regular fire risk assessment carried out and act on the findings of the risk assessment.

These good practises are detailed in the following section.

### **M1 RESPONSIBILITY FOR FIRE SAFETY**

#### **M1.1 The Responsible Person**

**M1.1.1** Fire safety is a shared responsibility between all those who work in the hotel. However it is most important that one person is given overall responsibility to ensure that agreed procedures are implemented. The size of the hotel will usually determine who is given the role of the Responsible Person. In smaller hotels it could be the Owner or Manager, whilst in larger establishments it could be the Manager or a Head of Department. It is important that the Responsible Person is competent to carry out this function has the authority to make decisions on fire safety matters.

**M1.1.2** The ‘competency’ of the Responsible Person does not necessarily depend on the possession of formal qualifications. A competent person is someone with enough training and experience or knowledge to be able to understand the risks involved and how to deal effectively with those risks. This can be demonstrated by the person:

- (a) having an understanding of relevant current best fire safety practice applicable to hotels;
- (b) being aware of his/her own limitations with regard to experience and knowledge; and
- (c) willing to build on existing experience and knowledge when necessary by additional training and/or by obtaining external help and advice.

It is clear that there will need to be a higher level of ‘competence’ demonstrated by Responsible Persons for in the larger, more complex hotels, than in smaller hotels.

M1.1.3 The Responsible person has a managerial role to ensure that all fire safety issues, including those required by legislation, are dealt with satisfactorily. He or she will define and supervise the work of the staff members who have been assigned specific duties in the event of a fire (see M3.1.1).

## **M2 FIRE SAFETY REGISTER**

### **M2.1 The Fire Safety Register**

**M2.1.1** The Register is an ongoing record of how the hotel is managed in terms of its fire safety. The Register will generally include the following information:

- Simple drawings of the hotel layout and location of firefighting equipment;
- The Emergency Response Plan;
- All the fire safety systems and equipment in the hotel;
- Regular management checks
- Routine maintenance, inspections and testing of equipment and systems;
- Follow up action after inspections/tests;
- Training given to staff members;
- Fire duties allocated to certain staff;
- Practice fire evacuation drills carried out;
- False and unwanted fire alarm actuations and the measures taken to eliminate these as far as practicable and
- Fire incidents and their analysis in order to learn from experience.

### **M2.2 Responsibility for the Fire Safety Register**

**M2.2.1** The person responsible for fire safety in the hotel (the Responsible Person) should be responsible for maintaining the Fire Safety Register.

### **M2.3 Updating the Fire Safety Register**

**M2.3.1** The Fire Safety Register should be kept up to date, as a sign of effective management. This means the Register should be updated to reflect daily occurrences and immediately after routine inspections/tests/maintenance of fire systems. The register will also be reviewed as part of the annual Fire Risk Assessment.

### **M2.4 Format of the Fire Safety Register**

**M2.4.1** The format can be devised by individual hotels to meet their own needs. Alternatively there are 'standard' Registers available from various fire safety organisations. The Fire Safety Register may be kept as a 'hard copy' or in electronic format; an up to date copy of the Fire Safety Register should be kept outside the hotel in a secure location.

### **M2.5 Availability of the Fire Safety Register**

**M2.5.1** The Fire Safety Register should be kept in the hotel and should be available for inspection by the local Fire Authority or others having jurisdiction.

### **M3 EMERGENCY RESPONSE PLAN**

The detail of the Emergency Response Plan will vary according to the size and complexity of the individual hotel and should be specific to each location. For small hotels it will be a very simple document but for larger hotels will be more comprehensive.

#### **M3.1 Contents of the Emergency Response Plan**

**M3.1.1** The Emergency Response Plan sets out how the hotel will deal with a fire should one occur. The Plan will usually contain the following information:

- A description of the main responsibilities and procedures to be followed in the event of a fire or an alarm of fire;
- A list of emergency contacts and other pertinent safety data. This information should also be clearly posted in locations such as Reception and staff rest rooms to allow personnel to react quickly and efficiently, in an emergency;
- A description of the evacuation procedures, with special attention given to the young, elderly and disabled. Appropriate action must be taken at time of check in to establish what if any disability a guest may report and ensure that evacuation procedures are adapted as appropriate to suit. This must be communicated to staff with fire safety/evacuation responsibilities immediately. Adequate instructions and information e.g. location of refuges, etc, need to be provided to the guest and;
- A description of the actions to be taken by individuals who have specific duties in the event of a fire, including who is responsible for calling the Fire Brigade. The emergency Plan should identify the correct number for calling the Fire Brigade.

#### **M3.2 Responsibility for the Emergency Response Plan**

**M3.2.1** The responsible person for fire safety in the hotel (see M1.1) is responsible for developing the Emergency Response Plan and keeping it up to date.

#### **M3.3 Updating the Emergency Response Plan**

**M3.3.1** Regular safety meetings should be organised by the responsible person at least once every three months, in order to consider any lessons learned, to review results, to take into consideration all pertinent suggestions from staff, and update safety procedures and instructions as required.

### **M4 STAFF FIRE SAFETY TRAINING**

The importance of staff training cannot be over-emphasised. All staff should be given appropriate information, instructions and training on a regular basis. The person responsible for fire safety in the hotel should also take responsibility for the fire safety training, although delivery of the training may be undertaken by other persons provided they are competent.

**M4.1** Staff who should receive the training

**M4.1.1** All staff, including night staff and part-time or casual staff should be given fire safety information, instructions and training which is appropriate to their duties and their responsibilities in the event of a fire. The training of night staff is of particular importance as there is often few staff on duty during the hours of darkness when guests are sleeping.

**M4.2** Frequency of training

**M4.2.1** Staff should receive training on appointment and regular training thereafter. It is suggested that training be given at least once in every 12 month period.

**M4.3** Extent of the training

**M4.3.1** The training provided should reflect individual staff duties and their responsibilities if there is a fire. The following topics should be covered in each training session;

- how fires occur and how to prevent them;
- the actions to be taken on discovering a fire;
- what to do on hearing a fire alarm;
- how to raise the alarm of fire;
- the correct way to summon the Fire Brigade;
- the type and use of fire protection systems in the hotel;
- the evacuation procedures for the hotel;
- the location and use of the first aid firefighting equipment; e.g. fire extinguishers;
- how to deal with people with disabilities

**M4.4** Additional training required

**M4.4.1** Staff who work in areas such as kitchens, laundries, engineering rooms etc. should receive additional training for the particular hazards they might meet. Some other staff e.g. reception staff will most likely have certain responsibilities in the event of a fire and should be given the appropriate training to carry out these duties. For example, they will need to understand the signals given by the Fire Alarm Control Panel.

**M4.4.2** Managers, heads of departments, maintenance engineers and safety technicians should also receive specific training dealing with risk assessment, fire precautions and management arrangements, including any Contingency Plan in place following an evacuation of the hotel.

**M4.5** Recording the training

**M4.5.1** All training given should be documented in the Fire Safety Register

**M4.6** Available advice

**M4.6.1** The organisations able to provide advice on suitable training for hotel staff are available from national Hotel Associations.

## **M5 FIRE EVACUATION DRILL**

The Emergency Response Plan will describe the way the hotel will be evacuated in the event of a fire. The Fire Evacuation Drill is a way of testing and practicing the procedures to see that they will actually work as planned.

### **M5.1 Frequency of the Fire Evacuation Drill**

**M5.1.1** Fire Evacuation Drills should be conducted at least once a year in every hotel under the direction of the person responsible for fire safety. It is suggested that an evacuation drill, supervised by a qualified fire safety professional, is carried out every three years.

### **M5.2 Supervision and monitoring of the Fire Evacuation Drill**

M5.2.1 Fire Evacuation Drills should be carried out under the supervision of the responsible person for fire safety in the hotel (see M1.2). It is important that the exercise is monitored and evaluated by a person not actively participating in the drill. Depending on the size and layout of the hotel it may be necessary to have additional monitors to report on the efficiency of the drill.

### **M5.3 Announcement of the Fire Evacuation Drill**

**M5.3.1** Senior staff should be consulted about the timing of the fire drill since, in many cases, actuation of the fire alarm automatically isolates the gas supply to boilers and kitchen equipment.

**M5.3.2.** To obtain the most from the drill it is suggested that staff be made aware on the day that a drill will be held. To avoid inconveniencing guests, they should also be informed that a drill will take place.

### **M5.4 The nature of the Fire Evacuation Drill**

**M5.4.1** The Drill should simulate a fire in a certain part of the hotel and the alarm should be operated by a member of staff. Where there are alternative means of escape the drill should assume that one escape route is blocked and unavailable. It should also simulate the need to evacuate disabled guests and make use of any special facilities provided such as Evacuation Chairs. All staff should take part in the drill and guests may also be invited to participate. For some hotels it may also be appropriate to invite the local Fire Brigade to take part in a drill. However, a drill should not be delayed or cancelled because the Fire Brigade are unable to attend.

### **M5.5 Documentation and actions following the Fire Drill**

**M5.5.1** The results of the drill should be recorded in the Fire Safety Register. Where necessary lessons learnt from the Fire Evacuation Drill should be used to revise the procedures set-out in the Emergency Response Plan.

## **M6 REGULAR MANAGEMENT CHECKS / ROUTINE MAINTENANCE AND INSPECTION OF FIRE SYSTEMS AND EQUIPMENT**

To ensure that they will work properly when required, it is essential that all fire safety equipment, systems, elevators, gas and electrical supplies, and technical installations related to fire safety are regularly inspected, tested and maintained and appropriate records kept. Much of this will be carried out under regular maintenance agreements but simple inspections may be carried out by staff during their normal duties.

### **M6.1 Regular management checks**

**M6.1.1** The regular management checks of individual hotels will be specific to that hotel, based on the extent of its fire protection installations, its size, location, brand and type.

**M6.1.2** Staff going about their normal duties should be encouraged to report such instances as fire exits blocked, fire doors wedged open or fire extinguishers missing or damaged. In smaller hotels it will be possible for one person to walk around the hotel to check for any deficiencies on a daily basis. Instances that can be dealt with immediately by the person discovering them e.g. a blocked fire exit should be resolved prior to being reported.

**M6.1.3** The central Fire Alarm Control Panel (if installed) should be constantly attended, night and day, by personnel who understand its operation. Where there is only a single attendant, qualified assistance will need to be available within a few minutes, in case of any emergency.

**M6.1.4** When a fire protection installation is temporarily out of service (by accident or for maintenance or repair), compensatory measures should be taken to ensure an equivalent level of fire safety is achieved until the installation is back in service. If this cannot be achieved a risk assessment should be carried out to assess whether the hotel, or part, should be closed down until the fire safety installation is back in normal operation.

### **M6.2 Routine maintenance, tests and inspection of fire systems and equipment**

**M6.2.1** The frequency and nature of inspections, maintenance and tests required will be described in the Fire Safety Register. Checks, servicing and maintenance should be undertaken in accordance with installers/manufacturers recommendations and, where appropriate, best practice standards (i.e. BS, DIN, EN, ISO standards).

### **M6.3 Persons carrying out the maintenance, tests and inspections**

**M6.3.1** Some of the routine inspections and/or tests can be done by trained hotel staff but other work will need to be done by a suitably qualified person, normally under maintenance agreements already in place.

### **M6.4 Recording the results of the maintenance, tests and inspections**

**M6.4.1** Results of all inspections, maintenance and tests carried out should be entered in the Fire Safety Register together with any follow up actions required.

**M6.4.2** Any remedial actions should be given an appropriate deadline for completion and be signed off once complete.

## **M7 FIRE RISK ASSESSMENTS**

A Fire Risk Assessment is an organised and methodical examination of the hotel, the activities carried on in the hotel and the likelihood that a fire could start and cause harm to those in and around the building.

### **M7.1 The intention of the Fire Risk Assessment**

**M7.1.1** The intention of the Fire Risk Assessment is:

- to identify the fire hazards;
- to remove the hazards or to reduce, to as low as reasonably practicable, the likelihood of harm occurring;
- to evaluate the risk to people, particularly the young, elderly and disabled;
- to determine what physical fire precautions and/or management arrangements are necessary to ensure the safety of staff and guests should a fire occur.

### **M7.2 Frequency of the Fire Risk Assessment**

**M7.2.1** The Fire Risk Assessment should be carried out regularly. It is good practice that it be:

- carried out at least once each year by the hotel management/Responsible Person or by a person who is deemed competent in accordance with national, regional or local guidelines;
- carried out every 3<sup>rd</sup> year by an external assessor who is deemed competent in accordance with national, regional or local guidelines;
- carried out if there are alterations to the hotel which might affect the findings of a previous assessment (e.g. building work, changes to layout, change of use of an area, significant changes in number of occupants) ; and
- kept under constant review and be updated to reflect any physical, procedural or operational changes within the hotel.

### **M7.3 Documenting the results of the Fire Risk Assessment**

**M7.3.1** The significant findings of the Risk Assessment, the actions to be taken as a result of the assessment and details of anyone especially at risk should:

- be written down and retained on the premises;
- be available for inspection by the local Fire Authority or others having jurisdiction; and
- contain details of the proposed actions, including timescale, to be taken to remedy any deficiencies discovered.

### **M7.4 Advice and guidance on Fire Risk Assessments**

**M7.4.1** A number of organisations provide advice and guidance on how to carry out a Fire Risk Assessment. Information on this is available from national Hotel Associations.

**M7.4.2** This assessment can be carried out in coordination with the hotel's insurer during any inspection or underwriting survey of the hotel providing the person carrying out the assessment is considered competent to do so.

## **M8 CONTINGENCY PLAN**

It is essential that a Contingency Plan is in place to deal with those people who have been evacuated from the hotel. People could be required to evacuate at night, wearing only their nightclothes and possibly be subjected to the effects of rain or freezing conditions.

### **M8.1 Considerations for Contingency Plan**

**M8.1.1** The Plan should be specific to the individual hotel and take account of its location, climate conditions and numbers of people involved. Hotel staff must be aware of the Plan so that they can start to implement it without delay.

**M8.1.2** If possible, alternative temporary accommodation should be identified, possibly using another local hotel, church, school or community centre.

**M8.1.3** The need for warm clothes and food should be considered.

**M8.1.4** If the hotel is remote from other suitable accommodation, transport may need to be provided.

## **M9 MANAGEMENT OF NEW CONSTRUCTION / RENOVATION / EXTENSION WORK**

Experience has shown that hotels, as well as other buildings, are most at risk from fire when construction or renovation work is being carried out in the premises. Therefore it is important that the risks posed by these works are identified and measures put in place to remove or reduce those risks to an acceptable level. When the work starts it is essential that it is closely supervised.

### **M9.1 Identifying the risks**

**M9.1.1** A risk assessment should be carried out to identify potential risks involved in the works and measures taken to mitigate against those risks.

**M9.1.2** Before the work commences the person responsible for fire safety should meet with the contractor to determine the work to be carried out and to agree a programme of action to ensure the work causes the least risk to the hotel and its occupants. This may involve closing or segregating off certain areas of the hotel and liaising with the fire brigade regarding any changes in access to the site or access to fire protection equipment.

**M9.1.3** If renovation works are being undertaken to an existing and partially occupied premises consideration should be given to the effect of disabling zones or otherwise parts of any fixed systems such as fire detection systems ensuring that false alarms are minimised and full 'protection' is implemented as soon as practicable.

**M9.2** Information to be given to contractor

**M9.2.1** The evacuation procedures for the hotel should be explained to the contractor. The escape routes and the location of the nearest fire alarm should also be pointed out. The contractor should be told it is essential that they keep all escape routes and exits free from any obstructions. He may also need to consider the effect of 'site' fire precautions on the remainder of the premises and the need in such instances to ensure that integral sites are suitably compartmented from the remainder of the premises due to the increased fire risk.

**M9.3** Information to be given to staff

**M9.3.1** All staff should be informed of the work being carried out and asked to be extra vigilant during the period of the work. The numbers of contractor's workers in the hotel each day should be registered at Reception so that they can be accounted for should an evacuation be necessary.

**M9.4** Actions if any 'hot work' is to be carried out

**M9.4.1** If any hot work is to be carried out e.g. use of welding equipment or blow torches, a 'hot work permit system' should be introduced. The Permit will need to accurately specify the work to be done, the location and the safety measures to be taken. The permit should only be valid for one day or part of a day and renewed as necessary.

**M9.4.2** The area where the hot work is to be carried out should be inspected to ensure that any combustible material has been removed or sufficiently protected against any heat or sparks produced.

**M9.4.3** A sufficient number of suitable fire extinguishers should be readily available in the area where the hot work is being carried out. It should be established that contractor's staff have been trained in the use of the extinguishers.

**M9.4.4** As soon as any hot work ceases the area should be examined. It should be examined again one hour later. If everything is satisfactory the hot work permit can be signed off.

**M9.5** Safe storage of contractor's equipment

**M9.5.1** Any substances which may prove hazardous, such as paints or flammable cleaning materials should be kept separate from other flammable materials in secure and well ventilated storage areas when not in use.

**M9.5.2** Any gas cylinders should not be left in the hotel overnight. They should be removed by the contractor or stored securely outside the hotel.

## **M10 MANAGEMENT OF THE THREAT OF ARSON**

Arson is a frequent cause of fires in hotels and therefore it is most important that actions are taken to reduce the threat as much as possible. The potential for arson to occur should be considered within the Fire Risk Assessment and appropriate measures put in place to reduce, as far as practically possible, the risk.

### **M10.1 Measures to reduce the threat of arson**

M10.1.1 There are a range of measures available to counter the risk of arson which can be applied as appropriate to individual hotels. A number of these are listed below:

- ensure the outside of the hotel is well lit;
- if it is practical secure the perimeter of the hotel;
- regularly remove all combustible rubbish;
- do not allow rubbish containers to be placed near to the outside of the hotel;
- all storage cupboards, linen rooms, plant rooms should be locked shut when not in use;
- encourage staff to report any person acting suspiciously;
- consideration should be given to installing some form of surveillance system e.g. Closed Circuit Television (CCTV), as the presence of such cameras can be a deterrent.
- ensure that any CCTV already fitted is working properly and monitored.

## INTRODUCTION TO SECTION “B” BUILDING AND SECTION “S” SYSTEMS

1. The following Sections ‘B’ and ‘S’ deal with the physical design and construction of a hotel and the fire safety systems which may be incorporated within it. It is acknowledged that in all cases the design of a hotel and the systems required must satisfy the regional, state or local requirements.
2. The information provided here is intended to help the individual Responsible Person and the Management Team to understand the fire safety demands made by local requirements, and to set out what is considered best European practice in this area. For many of the same reasons, the information will also be of benefit to those who design new hotels or extensions or major refurbishments in existing hotels.
3. This knowledge will give those involved a clearer understanding of why the fire safety requirements are made and how their own hotel functions in terms of its fire safety. This will assist them in their day to day fire safety management and also enable a more effective fire risk assessment to be carried out in individual hotels.
4. Sections ‘B’ and ‘S’ also contain advice on how to meet fire safety objectives if satisfying the prescriptive requirements is very difficult or impossible. This can be achieved by the use of fire engineering techniques or by intelligent utilisation of passive or active systems or a mixture of both.
5. The nature of the design and/or extent of systems in some existing hotels may fall short of what is described here. Where this occurs, those responsible in individual hotels should consider, on the basis of the Fire Risk Assessment, what is required to be done to bring the hotel up to an acceptable level of fire safety.
6. It is accepted that in some hotels the nature and extent of work required may have significant cost and operational implications. It would be reasonable, given these circumstances, to programme the work over a period of time, with priority given to that work which would result in the greatest improvements in the level of fire safety.
7. This approach should not be seen as an opportunity to delay or postpone any improvement work but as an acknowledgment of the difficulties some hotels would face if improvements are demanded immediately.

- 8 However, there will be some hotels where the current layout of the hotel, and/or the lack of appropriate systems, presents an unacceptable risk to guests and staff alike. Where this is identified by the Fire Risk Assessment, fundamental decisions will need to be taken regarding the continued operation, in whole or in part, of the hotel until such time as improvement work can be carried out.
- 9 The owner, manager and/or responsible person must not lose sight of the fact that, under most national and European legislation, they are responsible for, and will be held accountable for, the safety of their guests and staff.

## Section “B” – BUILDING

The design of a hotel building, its location, accessibility and quality of construction are important fire safety aspects that can impact on the ability of the building to withstand fire. It also affects the ease with which the occupants can escape and the ability of the local Fire Brigade to tackle a fire.

As has been previously stated the measures proposed in this section are aimed at dealing with life safety issues. Hotel owners may consider that additional measures, which go beyond the provisions of this document and local regulations, might be beneficial in preventing or reducing the property damage and business interruption resulting from a fire.

**In all cases the design of a hotel must, as a minimum, satisfy all the local, state or national standards (local standards) for construction and fire safety.** Those standards will in many cases quote either European or international technical standards or Codes of Practice. Where fire safety systems are discussed in the following Sections it is assumed that they will satisfy local standards as a minimum. The following sections are intended to set out design objectives to be achieved within the appropriate regulatory framework

### **B1 SITE SELECTION & BUILDING LAY-OUT**

- B1.1** The site should be accessible to Fire Brigade vehicles so that they can get within a reasonable distance of any inlets to firefighting mains and the main entrance to the hotel. Access should also be made available to the interior of the building to allow fire-fighters to assist in the evacuation of occupants and to fight the fire.
- B1.2** The hotel and all its exits should not be exposed to a fire originating in an adjacent or neighbouring property or occupancy. This can be achieved by providing adequate physical separation or fire resistive partitioning.
- B1.3** The building design and layout should allow the hotel to function effectively but should not incorporate designs which would increase the safety risk e.g. lengthy or complicated escape routes or designs which allow the rapid spread of smoke from one area to another.
- B1.4** Fire from a below ground or adjacent covered car park should not be able to cause any damage to the main building services or electric systems of the hotel. This can be achieved by providing adequate physical separation or fire resistive partitioning.

**B1.5** All 'back of house' (BOH) areas should be designed to be used rationally and separated from adjoining areas by adequate fire compartmentation.

## **B2 CONSTRUCTION AND INTERIOR FINISHES**

### **B2.1 Structural fire resistance**

**B2.1.1** The building structure should be designed and constructed to withstand a fire for long enough to allow all occupants to evacuate safely and to allow fire fighters to tackle the fire. Therefore consideration should be given to the location of the building and the time needed for the local fire-fighters to reach the scene and commence firefighting and rescue operations.

### **B2.2 Compartmentation**

**B2.2.1** Creation of individual fire compartments in the building, using fire resisting walls, floors, partitions and doors is necessary to prevent rapid fire and /or smoke spread within a building. The same objective can sometimes be achieved by the use of an automatic sprinkler system and/or an appropriately designed smoke control system. The provision of such automatic systems may also allow for some reductions in the fire resistance times of any physical components. The use of such 'compensatory features' need be considered by suitably competent persons.

**B2.2.2** External elevations (facades) and floors should be designed so that they are able to prevent a rapid fire spread from floor to floor.

**B2.2.3** The intelligent use of partitions and doors can effectively prevent horizontal fire and smoke propagation towards evacuation corridors, staircases and to other areas of the building. The fire resistance of partitions, doors and corridors should be adequate for the maximum expected time for the building to be evacuated.

**B2.2.4** Escape corridors and staircases should be separated from adjoining rooms by suitable fire resisting construction and should be fitted with self closing fire resisting doors, in order to avoid fire and/or smoke propagation to escape stairs and corridors. The degree of fire resistance required can be determined by fire risk assessment.

**B2.2.5** Vertical services shafts/ducts and their horizontal branches should not allow the rapid spread of fire and/or smoke between fire compartments. Hence they should form their own fire compartment or be compartmented at intervals commensurate with the building structure.

**B2.2.6** Passenger lifts and service elevators should not provide an easy route for the rapid spread of smoke or fire towards higher levels.

**B2.2.7** Glass roofs, ceilings or facades should not allow fire propagation between fire compartments.

**B2.2.8** Any breaches of compartmentation should be in-filled with fire stopping of an equivalent fire resistance. This is especially important following work undertaken by contractors.

### **B2.3 Interior finishes**

- B2.3.1** All interior finishes and decorations in bedrooms, corridors, stairways, and public areas including carpeting, curtains, lighting shades, suspended ceilings and lighting fittings should not be easily ignitable. Surface linings of walls and ceilings on escape routes should not allow for the rapid spread of fire across their face.
- B2.3.2** Any combustible material used above suspended ceilings e.g. electrical cable and insulation materials should not propagate fire rapidly.
- B2.3.3** Care should be taken to keep combustible materials away from any heat source such as lighting fixtures.
- B2.3.4** Interior decoration items such as furniture and bedding should satisfy the relevant national or European standards which means they should not be easily ignitable, neither should they burn easily.
- B2.3.5** Some existing upholstered furniture and beds may contain internal fillings which are flammable. It is good practice for staff to check on a regular basis that covers have not been torn or ripped, resulting in the filling material being exposed to potential ignition by a cigarette or match.
- B2.3.6** Any new furniture, fixtures or fittings introduced into a hotel should be subject to evaluation and assessment for safe use.

## **B3 ESCAPE ROUTES**

- B3.1** Escape routes are necessary to enable people to leave the hotel quickly and safely in the event of a fire. Escape routes consist of door assemblies, corridors, stairways, hallways, and exterior doors. They can include routes that are in normal use or especially dedicated routes used only in emergencies.
- B3.2 Design criteria for escape routes**
  - B3.2.1** Escape routes, including any narrowing such as where doorways are fitted, should be sufficiently wide to cater for the numbers of people expected to use them. Most national standards have a formula for calculating such numbers or alternatively an evaluation can be made by a qualified fire safety engineer.
  - B3.2.2** Escape routes should be protected against the ingress of fire and/or smoke by the use of fire resisting enclosures. Such routes are termed 'protected routes'.
  - B3.2.3** Escape routes should be as short as possible and allow direct, easy to follow paths to an exit or alternative exits, and finally to an exit door out of the building.

- B3.2.4** Once a person has entered a protected escape route it is preferable that they can stay within the safety of that route until they reach the outside of the building. However, it is acceptable in some circumstances for the escape route to include a portion of the route which traverses an unprotected area e.g. a reception area or hotel lobby. This approach would be considered more acceptable if there was an alternative escape route available from the hotel which exits direct to open air away from the building. Even if there is a second escape route this approach should always be subjected to a thorough risk assessment to consider the risks posed by the nature of the reception area or lobby and its contents. Consideration should be given to providing enhanced fire detection in the reception area or lobby to give an early warning of fire or to providing automatic sprinkler protection within the space to control and possibly extinguish any fire which may occur.
- B3.2.5** In some situations it is only possible for people to travel in one direction to escape from a fire. This is known as a 'dead end' or 'single path of travel'. The maximum length of these routes is generally specified in local regulations. As a general principle any 'dead ends' or 'single path of travel' should be kept as short as possible and protected from the effects of a fire.
- B3.2.6** High fire risk areas should not have any openings onto an escape route.
- B3.2.7** Hotels with 2 stories (or more) above ground floor should be equipped with a minimum of 2 escape staircases which are physically separated from each other by fire resisting construction. This is so that if one stair cannot be used because of the fire, then the other stair will still be available. Stairways should be protected, safe to use, and preferably lead directly to a final exit (see B3.2.4 above).
- B3.2.8** Where the provision of 2 escape stairs is not possible a Fire Risk Assessment should be carried out and appropriate compensatory measures applied to make up for any deficiencies highlighted by the risk assessment. These will be specific to the individual hotel but could include for example enhanced fire detection and alarm, additional structural protection, the provision of an automatic sprinkler system or some form of smoke control measures.
- B3.2.9** Escape routes should be available at all times. Doors on escape routes should be fitted with simple fastenings which can be operated from the side approached by people escaping. The operation of these fastenings should be readily apparent and without the use of a key and without having to manipulate more than one mechanism. The use of door fastenings incorporating a 'glass bolt' should be avoided as at night guests may be leaving the premises without footwear.
- B3.2.10** Hotel bedroom doors should always be easily operable from inside and open by a simple action. All escape doors should open in the direction of travel for escape; however doors to hotel bedrooms and doors to rooms with a small occupancy may open inwards.
- B3.2.11** Final exits should ideally be sited to allow rapid dispersal of people from the vicinity of the hotel so that they are no longer in danger from fire or smoke. This can be achieved by providing direct access to a street, passageway, walkway or open space. Where possible, escape routes should be configured such that evacuating guests do not interfere with fire fighting operations. The assembly point should be located some distance from the premises but in a safe area with no major obstacles (e.g. major roads) to overcome to get there. Glazing immediately adjacent to external escape routes should provide a degree of fire resistance in accordance with national standards.

**B3.2.12** Careful consideration should be given to the location of mirrors in escape routes which might misdirect people on their way out.

**B3.2.13** Curtains, shades, or other coverings should not obstruct the operation of emergency exit doors, and should not hide emergency exit signs.

**B3.2.14** External escape routes should be cleared of snow, leaves, etc as far as is reasonably practicable.

### **B3.3 Special provisions for disabled persons**

**B3.3.1** Anyone in the hotel, including guests and staff, with disabilities are entitled to feel safe and secure while staying in all hotels. Evacuation plans should consider guests with disabilities and pay particular regard to guests who are mobility, hearing or visually impaired together with those who have learning difficulties.

**B3.3.2** Evacuation procedures should particularly cater for disabled guests who are staying in bedrooms above ground or where steps or other hazards occur between public places or bedrooms and emergency exits.

**B3.3.3** In an ideal situation, disabled persons in wheelchairs should be able to use escape routes and to escape from the building without external assistance. If this is not possible, they should be able to reach or stay in a protected area (refuges) until evacuation and contact the reception desk if necessary. Suitable communications facilities should be installed in the refuge, in order to allow someone using a refuge to inform others.

**B3.3.4** For new hotels these procedures should be developed as part of the design process and be passed on to the Management Team when the hotel becomes operational. In addition, the provision of accommodation for guests with a disability on the ground (or lowest) floor should be seriously considered.

### **B3.4 Emergency escape lighting**

**B3.4.1** Escape routes should be provided with normal lighting as well as with emergency escape lighting which clearly illuminates the route all the way to safety.

### **B3.5 Emergency escape signs**

**B3.5.1** All exit routes should be adequately signposted to avoid confusion when evacuating the hotel. Escape signs should be clearly visible even if mains power fails; this could be achieved by proximity with emergency lighting or by the use of photoluminescent signage.

**B3.5.2** Notices should be displayed in guest bedrooms and at fire alarm call points explaining:

- the actions to be taken in the event of a fire or alarm of fire
- showing the escape routes in pictographic form
- showing the location of the nearest fire alarm call point and first aid firefighting equipment
- showing the location of the Assembly Point

### B3.6 Assembly Point

B3.6.1 People escaping from the hotel should congregate at a designated point where a role call will be held to ascertain if anyone is missing. This point is known as the Assembly Point.

B3.6.2 The Assembly Point should be

- Large enough to cater for the numbers of people escaping
- Away from Fire Brigade access points
- Suitably located at a safe distance from the hotel in an area with no major obstacles to overcome (e.g. major roads) to get there.

## **B4 SPECIAL PROVISIONS FOR HIGH RISE BUILDINGS**

**B4.1** The definition of a High Rise Building differs from one region/country to another, but general principles apply to all such buildings.

**B4.2** High rise buildings present particular fire safety problems due to:

- Increased number of occupants
- Longer evacuation times for occupants
- Upper parts of the building beyond reach of fire service ladders and aerial appliances.
  
- Extended distances between fire service command and control and operational bridgehead
- Delays in reaching the area of fire within the building
- Need to get sufficient firefighting water to the fire area
- Extra manpower and vehicle requirements
- Physically arduous nature of firefighting at upper levels.
- Potential effect of large or extended duration fire on the structure.

**B4.3** During the design phase of a new hotel special attention should be given to the above issues and solutions documented in the Fire Safety Master Plan.

**B4.4** Consideration should be given to the following:

- Increasing the fire resistance rating of the structure
- Increasing levels of compartmentation
- Provision of a fully automatic sprinkler system. *This may reduce or negate the need for increased fire resistance and/or compartmentation*
- Providing enhanced access to the building interior and upper levels e.g. by providing firefighters lifts.
- Providing protected lobbies to the stairs/lifts at each level to provide a 'bridgehead' for firefighters to set up operations
- Providing fixed water supplies by way of fully charged vertical fire mains
- Considering a 'phased evacuation' of the building to prevent 'overloading' of escape stairs
- Providing escape routes which exit direct to open air outside the building

## **B5 SPECIAL PROVISIONS FOR REMOTE OR ISOLATED HOTELS AND MOUNTAIN HOTELS.**

- B5.1** These hotels present specific fire safety problems mainly due to their location which may be isolated and difficult to reach thus causing delays in fire service attendance.
- B5.2** There may also be issues with available water supplies in isolated locations
- B5.3** The potential need for guests to evacuate the building in extreme weather conditions such as snow and freezing temperatures also needs to be considered.
- B5.4** During the design phase of a new hotel special attention should be given to the above issues and solutions documented in the Fire Safety Master Plan.
- B5.5** Consideration should be given to the following:
- Increasing the fire resistance rating of the structure
  - Increasing levels of compartmentation
  - Provision of a fully automatic sprinkler system. *This may reduce or negate the need for increased fire resistance and/or compartmentation*
  - Providing a fixed firefighting water supply
  - A suitable nearby building should be identified as a refuge for people needing to evacuate the hotel.

## **B6 SPECIAL PROVISIONS FOR PROTECTED BUILDINGS.**

- B6.1** Particular attention should be paid to protected historic buildings used as hotels, where the form of construction or layout (e.g. often with a single stairway) presents challenges when used as commercial hotel accommodation.

## **B7 SPECIAL PROVISIONS FOR PREFABRICATED BUILDINGS**

- B7.1** In case of hotels incorporating modern methods of construction (i.e. constructed of 'pods' or prefabricated structures), great care must be taken to ensure a high quality construction and that voids in the structure are fire stopped to prevent widespread smoke travel within the structure.

## **B8 COVERED OR BASEMENT CAR PARKS**

- B8.1** Hotel car parks are usually either located in the open air outside the hotel or at ground or basement level within or beneath the hotel
- B8.2** The design intention should be that a fire which starts in the car park should not be able to spread to other parts of the hotel and neither should it be able to affect any of the hotel systems or services
- B8.3** Covered or basement car parks should be equipped with a minimum of two (2) properly lit and signalled escape routes.
- B8.4** Where the provision of 2 escape routes is not possible a Fire Risk Assessment should be carried out and appropriate compensatory measures applied to make up for any deficiencies highlighted by the risk assessment. These will be specific to the individual car park but could include for example enhanced fire detection and alarm, additional

structural protection, the provision of an automatic sprinkler system or some form of smoke control measures.

- B8.5** The car park, stairways and lifts should be designed and installed such as to prevent the rapid spread of smoke or fire from the car park to other areas of the hotel.
- B8.6** A fire in a covered or basement car park should not present a risk to any of the main building services for the hotel. For example power cables supplying the hotel should not run unprotected through the car park areas.
- B8.7** Materials or finishes to floor surfaces, walls and ceilings, as well as any insulation materials used in the car park, should not contribute to the rapid spread of fire or the rapid production of smoke.
- B8.8** Facilities should be provided to deal with any spillage of petrol or diesel fuel in the car park areas.
- B8.9** Some means of providing for the control of carbon monoxide vapours and the removal of smoke in the event of a fire should be provided.

## Section “S”- SYSTEMS (Building Services)

A number of mechanical, electrical and possibly gaseous systems will be installed in a building to control the internal ‘climate’, to provide lighting and heating and to provide power for operating all the hotel facilities. Other systems will be provided specifically to improve the levels of fire safety in the building. All such systems should be designed, installed, tested and maintained to operate safely and to meet the appropriate technical standards for such systems. All information relating to the systems, including their tests and maintenance should be included in the Fire Safety Register. It is important that the design and installation of the ‘non-fire related’ systems does not allow for any undue fire development or spread e.g. via ductwork or through openings for services.

### **S1 SYSTEMS**

#### **S1.1 Heating Ventilating and Air Conditioning (HVAC) installations**

- S1.1.1** Air handling units, extract fans supply and extract ductwork should be designed and installed such that the rapid spread of smoke or fire from one floor or fire compartment to other floors or fire compartments is prevented.
- S1.1.2** This can be achieved by the use of smoke/heat dampers or by closing down parts of the system as appropriate.
- S1.1.3** A detailed ‘Cause and Effect’ matrix should be developed at the design stage of a new hotel to determine how the HVAC systems should operate in a fire emergency.

**S1.1.4** The HVAC system should be interfaced with the fire alarm and detection system such that the system will operate in accordance with the 'Cause and effect' matrix should a fire be detected.

**S1.1.5** Smoke exhaust outlets and fresh air inlets must be sufficiently far apart to prevent smoke or fumes being drawn back into the building.

### **S.1.2 Gas Installations and Distribution**

**S1.2.1** Gas or LPG installations and distribution pipe work must be designed, installed and maintained to reduce the risk of fire, explosion or gas leaks.

### **S1.3 Electrical installations**

**S1.3.1** In case of fire or other serious incident on the main electrical panel:

- Emergency electrical installations should be not affected
- Members of the fire brigade should be able to safely proceed without waiting for high voltage to be shut-off.
- The fire should not be able to spread outside of the electrical room via cable insulations or unprotected openings

**S1.3.2** An emergency electrical supply should be installed to feed essential fire safety installations where these do not have their own 'in-built' back-up power systems.

**S1.3.3** In case of fire, an emergency shut-off switch designed to cut-off all electrical power except emergency power, should be easily accessible to firefighters.

### **S1.4 Emergency lighting**

**S1.4.1** Emergency lighting should be provided to ensure good visibility along escape routes, and a minimum of visibility in public areas, independently from normal lighting. Electrical power for emergency lighting should be adequate to ensure full evacuation of all people at risk, and may be supplied from a single source or from several independent stands alone integrated units.

### **S1.5 Passenger and goods lifts**

**S1.5.1** Lifts should be designed and installed to meet industry and safety standards in full compliance with local standards and regulations. Lifts should include facilities to enable persons trapped in a lift car to be rescued should a power failure occur. Lifts should also be designed to continue operating in the event of a fire if:

- needed for the evacuation of disabled persons (if specified in hotel fire strategy); or
- the lift is designated as a fire fighting lift.

## **S2 DETECTION AND ALARM SYSTEMS**

### **S2.1 Automatic Fire detection and alarm**

- S2.1.1** An approved fire detection and alarm system should be installed in the hotel. The provision of smoke detectors (or heat detectors where smoke detectors might be susceptible to false alarms e.g. in kitchens) will increase the likelihood of a fire being detected very quickly and the alarm being given. Therefore detection should ideally be provided in all parts of the hotel including guest bedrooms and stairways.
- S2.1.2** Deep ceiling voids or roof voids or attics as well as main service risers or shafts should be provided with smoke detection.
- S2.1.3** The system should incorporate break glass/manual call points to enable guests or employees to raise an alarm of fire. Call points should be located in positions where they can be reached and operated without putting guests or staff at additional risk.
- S2.1.4** The system operation should take account of the evacuation strategy adopted for the individual hotel. It should also comply with any existing 'cause and effect' matrix with regard to its interface with other fire systems and building services.
- S2.1.5** The main Fire Alarm Control Panel (FACP) is the heart of all detection, alarm and crisis communication systems. It should therefore be located in a position which is constantly attended by personnel who understand its operation and near the main entrance to the hotel e.g. at Reception or Security room within a protected room/enclosure.. Where there is only a single attendant, qualified assistance will need to be available within a few minutes, in case of any emergency.
- S2.1.6** The FACP should be designed to continuously and reliably monitor with precision all fire detection, alarm, sprinkler and other fire safety systems in the hotel. For more comprehensive systems it should be possible to remotely control safety devices and other fire safety systems and manage emergency evacuation procedures from the FACP.
- S2.1.7** It should also be possible to sound the evacuation alarm to all parts of the hotel from the FACP. The alarm should be understood by all occupants, including people with temporary or permanent disabilities, including hearing or visual impairments.
- S2.1.8** In some larger hotels there may be a need for additional 'repeater panels'. These are best located at any secondary Fire Brigade access points.
- S2.1.9** Night attendants should be equipped with a pager or other form of communication to enable them to receive alarm signals wherever they are.
- S2.1.10** Lone night attendants should also be equipped with some form of distress system with automatic alarm signals to a constantly attended location.
- S2.1.11** A reliable telephone or other communication system should be available to alert the local fire brigade at all times in case of emergency. Consideration should be given to providing an auto-dialler system which will automatically relay the alarm to the Fire Service. This would be especially advantageous where there is only a single member of staff on duty.

**S2.1.12** In some circumstances, in order to avoid disturbance to hotel guests due to false alarms, a delay of 3 to 5 minutes may be considered appropriate before an initial alarm of fire results in the evacuation signal sounding throughout the hotel. This will allow time for the relevant staff to check if the alarm signal relates to an actual fire. It is very important that before this procedure is adopted that it has the full approval of the relevant approving authority e.g. the Fire Brigade. Before allowing such an approach the Authority would consider such things as how many members of staff would need to be on duty to operate the procedure; have they been sufficiently trained and would the fire alarm system be technically capable of operating the delayed evacuation system. They would also need to be satisfied that certain safeguards were built into the system such as an automatic sounding of the evacuation signal at the end of the investigation period if no action had been taken by staff, or if two detectors operated or a manual call point was operated.

## **S.2.2 Automatic CO and Gas detection systems**

**S.2.2.1** Any boiler house, kitchen, laundry rooms or other areas in the hotel where natural gas or LPG is used or stored, should be equipped with an automatic gas detection and alarm system, interlocked to shut-off the gas supply in the event of gas leakage.

**S2.2.2** Whenever covered or basement car parks are equipped with forced ventilation systems; CO detection should be provided and interlocked with ventilation systems to maintain CO concentration below acceptable limits.

**S2.2.3** CO detection should also be provided in fuel fired boiler houses.

**S2.2.4** Whilst it is not considered necessary to provide CO monitoring or detection to all areas of the hotel, the potential for CO to affect any areas of the hotel should be thoroughly investigated. Guest rooms or staff rooms located in areas adjacent to any CO risk should be subjected to a risk assessment and CO detection provided as appropriate.

## **S3 SMOKE MANAGEMENT SYSTEMS**

**S3.1** It is important that smoke from a fire is not allowed to prevent the use of escape routes. It is inevitable that some smoke may find its way into parts of an escape route but it is possible to prevent a serious build up of smoke which would prevent the escape route from being used in an emergency.

**S3.2** Smoke can be controlled by the use of physical construction such as smoke stop doors and solid construction. The smoke may also be vented naturally from the building by opening doors or windows or other openings to outside the building. A system of pressurisation of the space or mechanical ventilation may also be used.

**S3.3** Whatever approach is used it should be the simplest approach suitable for the individual hotel and taking into account all the particular circumstances such as configuration and length of escape routes leading to a point of safety.

**S3.4** In the event of fire, people escaping must be able to reach an exit door to a safe staircase or to the outside without being blinded or asphyxiated by smoke. By limiting the distance of travel to a protected escape the effects of any smoke can be reduced.

- S3.5** However in some circumstances a natural or mechanical smoke exhaust system may be required, depending upon the layout of the building, the escape route configuration and length of travel distances to reach safety.
- S3.6** As an alternative to smoke exhaust a system of pressurisation may be appropriate to keep an area free of smoke.
- S3.7** Basement or covered car parks will usually require some form of smoke ventilation which can also deal with any build up of CO.
- S3.8** Any atrium space within a hotel will most likely require specific fire engineering studies, and possibly fire simulations, in order to design an appropriate smoke control and removal system.

## **S4 MANUAL FIRE FIGHTING EQUIPMENT**

### **S4.1 First aid equipment for use by hotel emergency responders**

- S4.1.1** Properly trained staff who are able to use first aid fire fighting equipment may be successful in putting out a small fire and preventing it from becoming larger and more life threatening to the occupants of the hotel.
- S4.1.2** Manual first aid fire fighting equipment should be provided according to the local requirements. Manual firefighting equipment can consist of portable fire extinguishers, fire hoses, fire blankets, sandboxes etc.
- S4.1.3** The type and size of hotel, the nature of risks posed, and the support available from the local fire brigade should be taken into consideration when assessing the need for equipment.
- S4.1.4** Manual first aid firefighting equipment should be placed in locations where it can be quickly and safely picked up and used. For example, it is safer to place a fire extinguisher by the exit door from a kitchen rather than at the opposite end of the kitchen where it might be more difficult to retrieve if a fire were to occur. Fire extinguishers should generally be sited on escape routes or adjacent to specific hazards they are designed to protect.
- S4.1.5** A purpose built safety vehicle, equipped with first aid medical and fire fighting equipment may be useful in hotels located in remote and/or isolated areas.

### **S4.2 Fire fighting equipment for use by professional fire fighters**

- S4.2.1** Equipment which is readily available for firefighters to use when they reach the scene of a fire will help them in their task of quickly controlling the fire and providing any assistance to the occupants.
- S4.2.2** Street fire hydrants in accordance with local requirements should be provided having the necessary volume, flow and pressures to be used by firefighters tackling a fire anywhere in the hotel.
- S4.2.3** Depending on their height and location some buildings may need fire fighting shafts and associated equipment such as dry or wet rising mains in order to provide firefighters with a speedy and ready supply of water close to the point of need.

- S4.2.4** Depending on their height and location some buildings may need to be equipped with a firefighter's lift or lifts in order to provide firefighters and their equipment with speedy access to the location of the fire with the minimum of physical exertion.
- S4.2.5** Local requirements may specify that other pieces of fire service equipment such as fire hose and/or hose branches be kept within the hotel for the use of firefighters.
- S4.2.6** Outlets on the façade of a hotel and protected ducts into the interior may be required to allow firemen to connect their portable fans in order to force out smoke and allow better visibility within the hotel.
- S4.2.7** Equipment provided for fire service use should be labelled to prevent its use by unqualified persons.

## **S5 SPRINKLER SYSTEMS**

- S5.1** Automatic sprinkler systems are a very effective way of extinguishing a fire, or at the very least, keeping it in check until the arrival of the firefighters.
- S5.2** They provide a high degree of life safety, property protection and business resilience, and can also have a direct beneficial effect on life safety.
- S5.3** Sprinklers may be provided to compensate for deficiencies in such areas as fire brigade access, compartmentation, excessive travel distance to a safe exit, smoke management, excessive combustible loading, or minimum number of staircases in existing hotels.
- S5.4** In new hotels sprinklers may be used as part of the integrated fire safety design for the building thus allowing for reductions in areas such as structural fire resistance, compartmentation, travel distances and fire service access.
- S5.5** In both existing and new hotels the potential benefits of sprinklers may be investigated as part of the fire risk assessment.
- S5.6** Sprinkler installation should be designed and installed in compliance with local and international standards.
- S5.7** Many of the benefits of automatic sprinkler systems can also be derived from the use of water spray or mist systems.

## **S6 SPECIAL RISKS**

- S6.1** Areas in hotels identified by the Fire Risk Assessment as special risk areas should be provided with enhanced fire safety systems.

- S6.2** Due to their inherent fire risk, kitchens should be equipped with the following fire safety systems:
- Emergency power cut-off push buttons
  - Emergency gas shut-off valve
  - Smoke ventilation systems where regulations demand
  - Fixed automatic protection for areas such as deep fat fryer(s)
  - Manual fire fighting and safety equipment
- S6.3** Shut-off valves and/or push buttons should be placed in positions where they can be operated safely without putting staff or emergency responders at additional risk.
- S6.4** Every emergency power generator should be isolated by adequate fire separation, fitted with all necessary safety devices and protected by appropriate fire protection systems.
- S6.5** Appropriate measures should be taken in order that fuel tanks do not create a fire risk to the hotel.
- S6.6** Boilers, water heaters, and substations must be equipped with emergency shut-off and safety devices, as well as appropriate detection and suppression systems, in accordance with their location and source of energy e.g. oil, gas, LPG, fire steam, electrical power.
- S6.7** Vertical linen chutes, whether in use or not should be designed and equipped to prevent rapid fire and/or smoke propagation from one floor to another. A smoke detector and/or a sprinkler head should be provided at the top of the chute.
- S6.8** Vertical food lifts/hoists (Dumb waiters) whether in use or not should be designed and equipped to prevent rapid fire and/smoke propagation from one floor to another.
- S6.9** Below ground and covered car parks should be equipped with appropriate safety and fire protection systems such as:
- Automatic ventilation systems to lower the CO concentration to a safe level, interlocked with CO detectors,
  - A manual switch available to fire fighters and hotel management in order to activate extraction of smoke in case of a fire.
  - Emergency lighting inside car park, lobbies and stairways.
  - Fire alarm call points and/or two way communication systems
  - Manual fire fighting equipment: fire extinguishers, sand boxes, dry risers.
  - Automatic sprinkler or water spray/mist systems when required
- S6.10** Appropriate measures should be taken when the hotel is hosting events with large numbers of attendees (e.g. conferences).
- S6.11** Other special risks (e.g. saunas) should be listed and addressed in accordance with the usual rules applicable to these risks.

## **GLOSSARY OF TERMS**

The following descriptions of word/terms used in this Guide are intended to help the reader understand terminology which may be unfamiliar.

### **G1 Active fire systems**

Fire protection systems which generally operate automatically in a fire situation e.g. fire alarms, emergency lighting, sprinklers and smoke control systems.

### **G2 Automatic fire detection and alarm system (AFD)**

An AFD system is designed to detect the presence of smoke (or heat) using detector devices located about the building. Once smoke or heat is detected the system raises an audible alarm to alert the occupants. The system can be set up to automatically transmit an alarm to a Central Alarm Station or directly to the local Fire Brigade.

### **G3 Automatic sprinkler system**

A system for automatically applying water to a fire by way of a water supply, providing adequate pressure and flow rate, to a water distribution piping system, onto which fire sprinklers are connected. The sprinklers are connected to the pipe work which is filled with water supplied either from the water mains or from a storage tank via a pump. The sprinkler is a temperature-sensitive device which opens in a fire to discharge water for fire extinguishing.

### **G4 Compartmentation**

Enclosure of a building or part of a building by fire resisting construction to prevent the spread of fire to or from another part of the same building or an adjoining building.

### **G5 Design Team**

A group of professionals responsible for designing a new hotel or the extension or refurbishment of an existing hotel

### **G6 Emergency lighting**

Lighting provided to maintain illumination of escape routes when the normal lighting supply has failed.

G7 Escape stair

A stair that is protected from fire from other parts of the building by fire resisting construction which discharges via a final exit to the outside of the building or a place of safety.

G8 Fire Authority or Authority having jurisdiction

The authority that is responsible for enforcing local fire safety standards in hotels e.g. the local Fire brigade or local Municipality

G9 Fire engineering

The application of science and engineering to achieve one or more fire safety objectives in such a way that they are achieved without following, in full or in part, the prescriptive requirements of local regulations or technical standards.

G10 Firefighting lift

Specially protected lift, including additional power supplies and controls which allow it to be used under the direct control of the fire brigade to assist in firefighting.

G11 Fire main

A water supply pipe, fitted with an outlet and control valve at specified points, installed in a building for firefighting purposes.

G12 Fire safety systems

Systems incorporated into a hotel which improve the general level of safety for guests and potentially reduce damage caused by fires (see Active fire systems and Passive fire systems).

G13 Hotel emergency responders

Members of staff who have been given sufficient training to enable them to respond safely and effectively in the event of a fire.

G14 Local regulations

National, regional, state and local regulations relating to fire safety which are applicable in any particular location. These may apply both to the design of buildings and fire safety management of buildings.

G15 Management Team

A number of people within a hotel who are individually responsible for the management of various sections or departments.

G16 Passive fire systems

Fire protection systems which are not permanently in place and do not rely on automatic operation e.g. fire rated partitions and fire doors.

G17 Phased evacuation

A system of evacuation where a limited number of floors are evacuated at the same time. This is usually the floor containing the fire and the floor above. The remaining floors are evacuated at a later stage if necessary.

G18 Protected lobby

A space within the building which is enclosed with fire resisting construction and accessed via fire resisting self-closing doors.

G19 Refuge

An area enclosed by fire resisting construction, such as a lobby, which has been designated for use by disabled people who are unable to escape unaided during a fire evacuation.

G20 Smoke control system

A system which can be mechanical or natural which allows the movement of smoke to be controlled within a building or space. Depending on the system it may incorporate mechanical fans, openable windows or fire doors or a combination of each.

G.21 Travel distance

The actual distance a person needs to travel within a building to reach the nearest exit. This can be an exit into an escape stair or direct to the outside of the building. The travel distance should allow for the layout of walls partitions and fittings.

G22 Technical standards

Various technical documents which describe requirements for the design and construction of buildings, together with the design, installation and maintenance of fire safety systems and the management procedures to be adopted.

## **ANNEX 1**

### **List of members of Working Party and Stakeholders Consultative Committee**

#### **Working Party**

|                     |                              |
|---------------------|------------------------------|
| Attlan Jean-Michel  | GNC/ACCOR/France             |
| Broux Christophe    | UMIH/ France                 |
| Carey Patrick       | Locke Carey                  |
| Cutajar Omar        | MHRA/ Malta                  |
| Despagne Henri      | GNC/ACCOR/France             |
| Dyson John          | BHA/United Kingdom           |
| Favre Jean-Paul     | Hotelleriesuisse/Switzerland |
| Kirchner Meinhard   | IHA-D/Germany                |
| Moxness Paul        | Rezidor                      |
| Nuessler Dieter     | FEU                          |
| Nyström Kent        | President of HOTREC          |
| Sequaris Marguerite | CEO of HOTREC                |
| Waravka Alexis      | Policy Advisor HOTREC        |
| Wrann Anton         | APHA/Austria                 |

#### **Stakeholders Consultative Committee**

| <b>Name</b>                       | <b>Association/Company</b> |
|-----------------------------------|----------------------------|
| Albinson Björn                    | EU Fire Safety Network     |
| Bulfon Wolfgang                   | MEP, European Parliament   |
| Brinson Alan                      | EuroSprinkler              |
| Cooper Andrew                     | IFTO                       |
| De Blust Michel                   | ECTAA                      |
| Hagen René                        | EFA                        |
| Hills Angela                      | IFTO                       |
| Howald Kerstin                    | EFFAT                      |
| Koller Michaela                   | CEA                        |
| McAvan Linda                      | MEP, European Parliament   |
| McCarthy Arlene                   | MEP, European Parliament   |
| Noël Sandrine                     | CEA                        |
| Russe Christina                   | ECTAA                      |
| Marone Paolina                    | ECTAA                      |
| Rüegg Hubert                      | CFPA-Europe                |
| Russel Stephen                    | ANEC                       |
| Soro Stefano                      | European Commission        |
| Straszburger Gwenn                | European Commission        |
| Vuerich Michela                   | ANEC                       |
| Metz Corinna<br>For MEP W. Bulfon | European Parliament        |